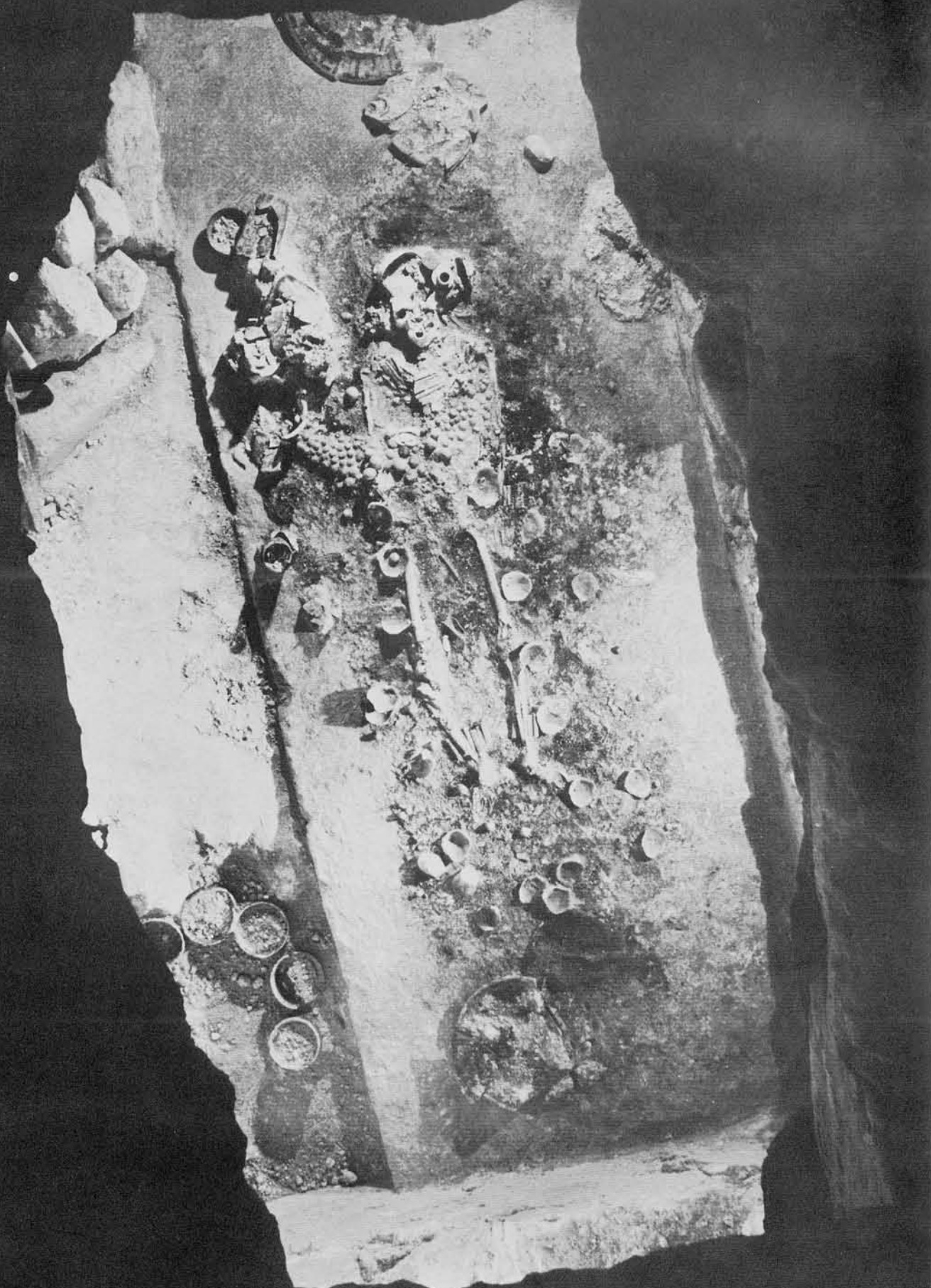


Plan view of Temple I  
showing skeleton and offerings



## THE SPLENDID TOMB OF TEMPLE I At Tikal, Guatemala

By AUBREY S. TRIK

"Pothunter," grave-robber," and "tomb-looter" are not respectable epithets in the vocabulary of archaeology. However, these similar activities are sometimes dignified by the objectives which inspire them and by the amount of cultural information diligently extracted from otherwise unglamorous rubble and mud-mortar. In the case of Temple I at Tikal, "The Temple of the Giant Jaguar," a tomb was not the primary objective of the almost four hundred feet of tunnels dug into the interior of the great pyramid. Information concerning the earliest stage and successive constructions was the first consideration, but the Maya practice of intruding burials of important personages into their pyramids presented a probability that a tomb would be found in this, the

first of the Tikal Great Temples to be investigated by tunneling. The archaeologist himself cannot deny the thrill of finding, or even the prospect of finding, a well-preserved rich burial to add color to routine excavation and recording, and this possibility was an added incentive as an exploratory tunnel was begun, in 1959, at plaza level into the stairway of the pyramid of Temple I.

The tomb proved to be elusive. Expected and familiar data—floors, types of fill, sherd samples, and even caches—were encountered, collected, recorded, and studied as soon as the tunnel had penetrated the stairway, but none of the customary signs that forecast a burial was recognized until the excavation had been pushed about twenty-five feet toward the center of the pyramid. The presence of quantities of flint and obsidian chips in fill overlying tomb construction is a distinctive trait of Maya burial practices in the Petén, and numerous instances had been found at Tikal in association with burials of both Early Classic and Late Classic periods. Consequently, when the pickman began to encounter pockets of flint chips in the stone and mud-mortar fill it was optimistically taken for granted that an important burial was not far ahead or below the area that was producing these significant tokens. But this was not to be the case. Expectancy faded and became mixed with perplexity as the tunnel progressed forward while the appearance of flint diminished and finally ceased altogether. No further signs of a burial could be distinguished—the stone and mortar fill appeared undisturbed by intrusion, and the early lime-concrete floor over which the pyramid of Temple I had been erected was unbroken.

This situation presented a question concerning the significance of flint chip deposits: would they





Temple I, which faces west. To reach the tomb, one enters the excavated tunnel at the base of the stairway (A); at a short distance in from the stairway base, one turns left (north), entering another tunnel; about twenty feet along this tunnel is the location of the tomb. It occurs behind the pyramid terrace wall at B, but had been cut deeply down below the Great Plaza floors running beneath the temple pyramid.

prove consistently indicative of burial activity when found under such circumstances, or had they still another, undetermined, meaning? Previous experience at Tikal supported the probability of a tomb but, at this stage of excavation, there was no clear indication of where it would be found. The center-line tunnel had penetrated only twenty-five feet into the interior of the pyramid and, rather than begin random probing for a tomb by lateral excavations, we decided to continue axial tunnels as originally planned for investigation of the great pyramid.

During 1960 and 1961, tunneling was continued at both the base and upper levels of the pyramid but no masonry remains of an earlier building were found and no further clue as to the location of a tomb was developed. However, by the 1962 season William R. Coe's excavations and analysis of the growth of the North Acropolis supported the supposition that, if they existed, earlier structures underlying Temple I would be found to the north of the center line of the pyramid. Since no tomb or burial had been encountered on the late axis, it was further reasoned that the flint chip deposits could indicate burial activity in relation to an earlier building, located farther to the north and subsequently covered by the construction of Temple I pyramid.

During the 1962 season, two lateral tunnels were extended to the north from the center-line tunnel, both in the area of the heavy flint deposits. The first tunnel produced increasing quantities of flint as it progressed to the north but no other signs of a burial or tomb were found after the excavation had been carried forward almost thirty feet. The literally thousands of flint chips imbedded in the mud and rubble fill was an encouraging and clear indication that excavation should not be abandoned, although this tunnel had reached its productive limit. Accordingly, another tunnel was begun about nine feet to the east of and parallel to the first. As before, flint concentration increased as the diggers penetrated to the north and, after seventeen feet, remains of a decayed horizontal beam were struck, about three feet above the floor which formed the bottom of the tunnel. Although the meaning of a beam at this point was not understood, it was taken as evidence that the diggers had arrived at an area where the Maya had been up to something. It required only fifteen inches more of digging to show that the "something" was the intrusive tomb-cut which had been looked for: the lime-concrete floor had been cut in a straight line now to be seen across the full width of the tunnel, and flint-bearing mud and rubble fill descended below the level of the floor.

With one limit of the actual burial area determined, known tomb construction practice at Tikal made it possible to anticipate a tomb pit and to excavate accordingly. The tunnel was continued to the north, across the area where the floor had been removed by the Maya, and the opposite cut edge was found. These two edges represented the north and south limits of a pit the Maya had sunk through the floor into the underlying fill. At this point no trace of tomb construction itself was evident, but it was a simple assumption that the center line of a buried vault or chamber would lie midway between the two edges of the pit; therefore, a tunnel was begun at right angles to the north-south excavation. In due course the east and west cut edges of the floor were exposed and an approximately 15-foot square pit was defined by the four 3-foot sections that could be seen within the intersecting tunnels. Excavation was then continued downward within the exposed limits of the pit. In addition to a constantly increasing quantity of flint, obsidian chips, broken cores, and flake-blades began to appear between the stones of the rubble and mortar fill. Previous excavations at Tikal had produced similar obsidian deposits, usually close to the entrance or immediately overlying the masonry of tomb construction.

At a depth of about three feet below the level of the floor a large, irregular slab of limestone was uncovered. On top of it were charcoal remains of a ceremonial fire and many small obsidian chips and broken flake-blades. Other flint and obsidian chips were thickly distributed along the sides and tightly packed against the edges, as though intended to seal the stone in its position. When the diggers had cleaned the surface of the

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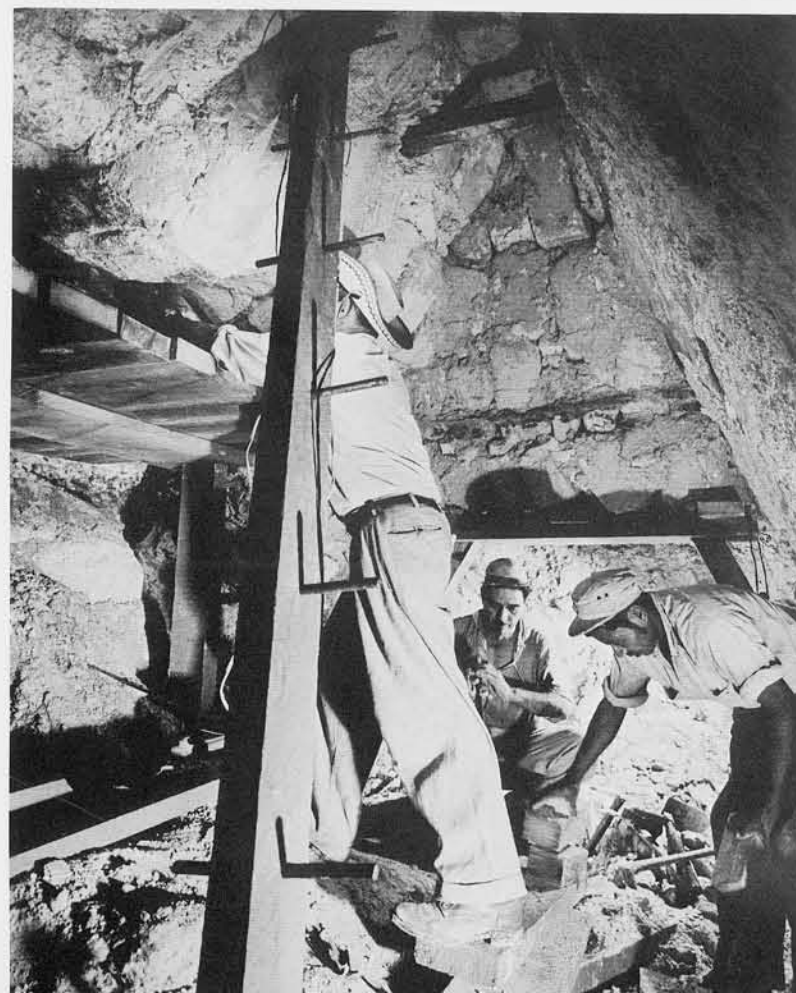
*The north tunnel excavated within the hearting of the final Temple I. The author is examining the stone rubble placed by the Maya as fill over the tomb. In the foreground is a buried Plaza floor through which the Maya cut the huge pit in which the vaulted tomb chamber was constructed. Directly in front of the author in this view is a short east tunnel which exposed capstones of the tomb vault as shown on the opposite page.*

slab, a small crack opened between it and an adjoining stone, offering an opportunity to check the assumption that the top capstones of a masonry vault had been found. A thin measuring tape was lowered through the crack to a depth of six feet without touching bottom or meeting any obstacles. The elusive tomb had finally been pinned down. To judge from the size of the pit and the extent of the void under the capstone, a large and at least partially uncollapsed vaulted chamber lay below.

This stage of excavation was reached in May 1962, just when preparations were being made to terminate the season's field work and to close down the camp. Reluctantly and with extreme curiosity concerning the condition and contents of the tomb, we sealed off the tunnel entrance until excavation could be resumed.



*Looking east we see the upper face of one of a series of large capstones which span the still invisible opposed half-vaults of the chamber below. The visible top of the capstone was littered with charcoal. Removal of this capstone revealed a large brilliant red disc on its under surface and gave the first glimpse down into the chamber.*



*Once the red-dot capstone had been removed, the partially collapsed tomb was entered. Workmen, shown standing on the thick mound of vault debris covering the skeleton and offerings, are installing supports to prevent further collapse. The sloping half-vaults of plastered masonry blocks are clearly visible.*

The following November, the large limestone slab was removed and complete excavation and recording of the tomb was begun. The stone, unusually large for the purpose, proved to be the central capstone of a vaulted burial chamber. On the bottom surface, in the area which spanned the opening between the two sloping sides of the vault, a 10-inch spot was painted with brilliant red cinnabar. Although the significance of the red disk is not known at this time, an identical mark was found on the capstone of a vaulted tomb discovered below the pyramid of Structure 5D-33 during the field season of 1961. The duplication of this red symbol and other similarities between the two tombs—location below large Late Classic pyramid, pit-type construction, and profuse use of flint and obsidian chips in overlying fill—forecast the style of burial and mortuary offerings to be expected. In general, anticipated conditions proved well founded, but the contents of the Temple I tomb, now designated Burial 116, turned out to be, in many respects, the richest yet found in Tikal.

After removal of the capstone the opening was enlarged to allow entrance to the chamber. Although the greater part of the vault was intact, the weight of the superimposed burden and horizontal pressure had pushed the side and end walls inward and lower courses of the vault masonry had subsequently dropped, filling the room with rubble and earth to a depth of about three feet. No part of the floor or burial contents was visible. In general design, the chamber resembled a room of a temple or palace building, but with no doorway. Vertical side walls and sloping ceiling, typical of Maya corbelled vault construction, were built of soft limestone, laid in horizontal courses and finished with a thin coat of lime plaster. Three tiers of log beams, four to five inches in diameter, now disintegrated to powder, had originally been deeply imbedded in the sides of the vault to span the width of the chamber, in the same way vault beams are seen in the temple and palace buildings throughout the site.

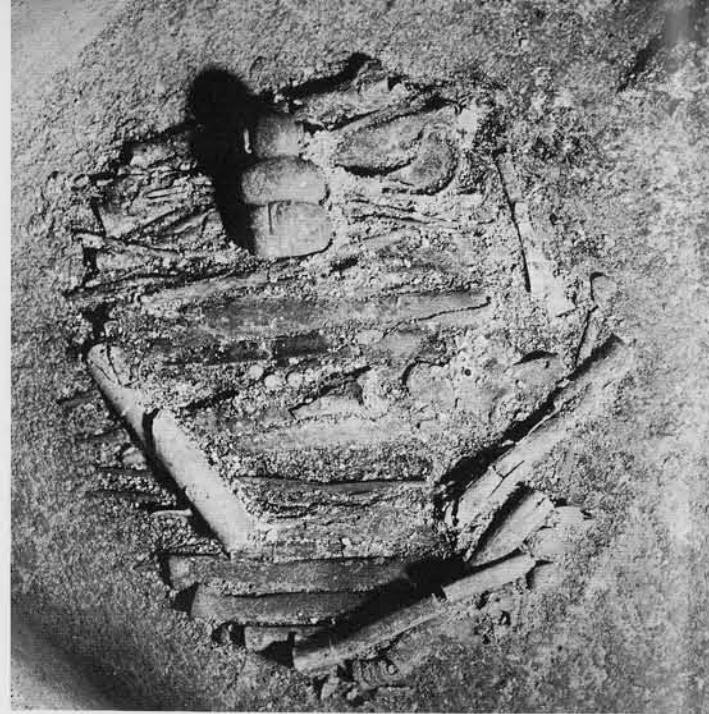
Before diggers could begin removing fallen stones it was necessary to shore unsupported sections of the vault with stout timbers and heavy planking to insure against further collapse. Then began the slow task of breaking up the large fallen stones to a size that could be loaded into buckets and hoisted through the restricted opening in the vaulted ceiling. This labor brought to mind the problem the Maya must have faced in lowering a corpse and all his grave furniture through a similar opening, plus the discomfort of the activity-generated heat and stuffy atmosphere within the tomb.

Once the heavy material was removed and only a layer of soft fill and small stone remained, it was necessary to begin careful excavation with small tools and brushes. The richness of the burial became apparent as artifacts came to light one by one, beginning in a cramped corner at the north wall and working progressively to the south wall. First, a large polychrome tripod bowl closely followed by an unusual vessel fashioned to resemble the cross section of a huge conch shell. Then a succession of pots, an unusual quantity of jade adornments, pearls, shells, the skeleton, and other grave furniture were cleared and recorded until the entire burial was exposed *in situ*. The tomb was large by Tikal standards, measuring fourteen and a half feet in length by almost eight feet in width and thirteen feet in height from the lowest part of the floor to the bottom side of the vault capstones. In plan it was divided into two distinct areas: a low platform or dais extended the full length of the room against the east wall, leaving a 29-inch aisle along the west side. The platform was the focus of the burial and the aisle undoubtedly served as the area where priests and attendants officiated during the burial ceremonies within the tomb.

The burial contained a single male individual, fully extended on his back in the center of the dais, richly adorned with unusual quantities of jade, pearls, and shells, and surrounded by grave furniture. The jade, some of exceptionally fine color and quality, consisted of headdress plaques, tubular necklace beads, bracelets, anklets, and earplugs. Many well preserved pea-shaped and baroque pearls were found in the neck and chest area, probably originally part of the jade necklace. Across the lower chest was a surprising "collar" composed of 114 spherical jade beads, graduated in size from one-half to two inches in diameter and weighing a total of eight and one-half pounds. Fortunately, the beads had not been scattered by falling masonry but remained in their relative positions, making possible the reconstruction of a rare example of the heavy bead collar worn by Maya dignitaries shown on stela sculptures at Tikal and other sites. In addition to the wealth of personal adornments on the skeleton, offerings consisted of twenty pottery vessels, an alabaster vase, an unusual jade mosaic vase with lid, pyrite encrusted slate plaques, shells, and stingray spines. Other materials, disintegrated beyond recognition, left only traces and stains to suggest apparel, possibly of textiles, leather, or feathers. A heavy, dark brown layer of finely decomposed material under the skeleton was identified as jaguar or ocelot

Among the many pottery offerings of the tomb were these three vessels. To the right is a magnificent example of Late Classic polychrome figure painting. An almost identical scene of an enthroned dignitary is shown on the opposite side of the 12-inch high cylindrical vase. The small bowl, about 6 inches in diameter, directly below, is of interest for the depiction on the interior base of what appears to be a highly stylized version of the Mexican rain deity Tlaloc surmounted by a form of the Mexican year symbol. The device is not unknown in Late Classic Maya pottery. The strangely shaped vessel (bottom), 11 inches in diameter, is patterned on a sectioned conch shell. A strange glyphic device was painted on the interior. A hole had been put through the center of the vessel floor, presumably to "kill" it.





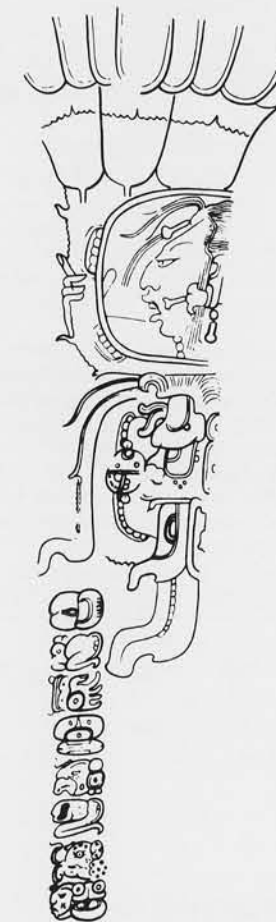
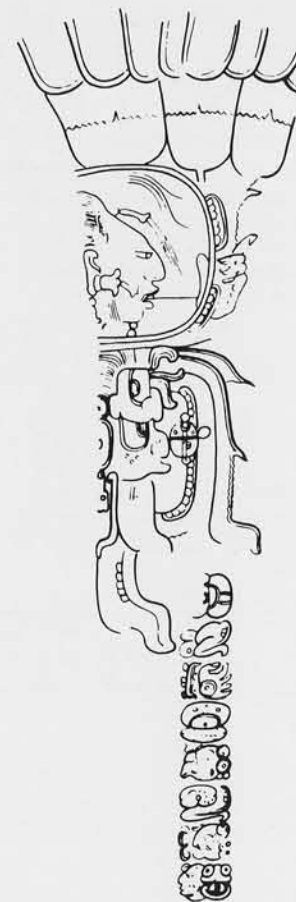
On the extreme south end of the true floor of the tomb was a remarkable collection of plain and incised or carved bones. Lying face down on this deposit was a fine figurine of jade, 4 inches high (shown also at left). Why the Maya charged with arranging the offerings chose to place this superb carving here, face down, is unknown. Conceivably it had been placed on the tomb bench but fell to where found with the partial collapse of the tomb.

skins by numerous groups of feline paw bones spaced along the edge. When the floor was finally cleaned, clear imprints of a fringed *petate*, a palm or straw mat similar to those made by modern Indians, were found in the soft, damp marl surface of the dais, and a few similar impressions of a finely woven textile overlay the edge of the mat.

Because of the profusion of objects and the restricted space in which to work, the entire contents of the dais were cleared, recorded, and removed before attention was turned to the narrow aisle. The north half of the aisle proved to be absolutely bare except for a simple bone implement, which appeared to have been randomly dropped rather than deliberately placed. This space, free and uncluttered, seemed necessary for foot room for the priests or attendants who performed the burial rites and placed the many offerings around the body, and it was probably from this area that they made their exit through an opening in the vault, by means of a ladder, when the ceremonies were completed. In the central and south area was a total of twelve pottery vessels, ten of which were polychrome cylinder vases with scenes of enthroned "priests" and supplicant subjects standing or kneeling before the throne. Hieroglyphic bands and panels, probably non-calendrical, were incorporated in the decoration. The artistry and technique exhibited in the draftsmanship and compositions ranged from unusually fine to rather crude, and

the similarity of the subjects suggests that the vessels were decorated by different artists, specifically as funeral offerings and presumably depicting scenes relating to the life of the deceased. Possibly further study of the hieroglyphic texts will shed light on the relationship of the scenes to each other and to the burial as a whole. In addition to the twelve pottery vessels, there were two pyrite-encrusted plaques and a few random stone beads and inlays.

At this stage of the excavation there remained only the extreme south end of the aisle floor to be cleared, and it was here that the most extraordinary artifacts of the entire burial were found. They consisted of a cluster of worked bones which, on first sight, resembled nothing more than a jumbled pile of broken and partially disintegrated jackstraws. On top of the bones, lying face down, was a small jade figurine. This statuette, about five inches high, depicts a male figure, seated with legs crossed and arms folded across the chest with hands on the shoulders. The only clothing is a wide waist band and breech cloth. The head is smooth with only small grooved representation of a fore top-knot of hair. The lobes of the ears are pierced and may at one time have contained suspended ear ornaments which were not found in the debris. The carving and representation of the figure are simple, rather than



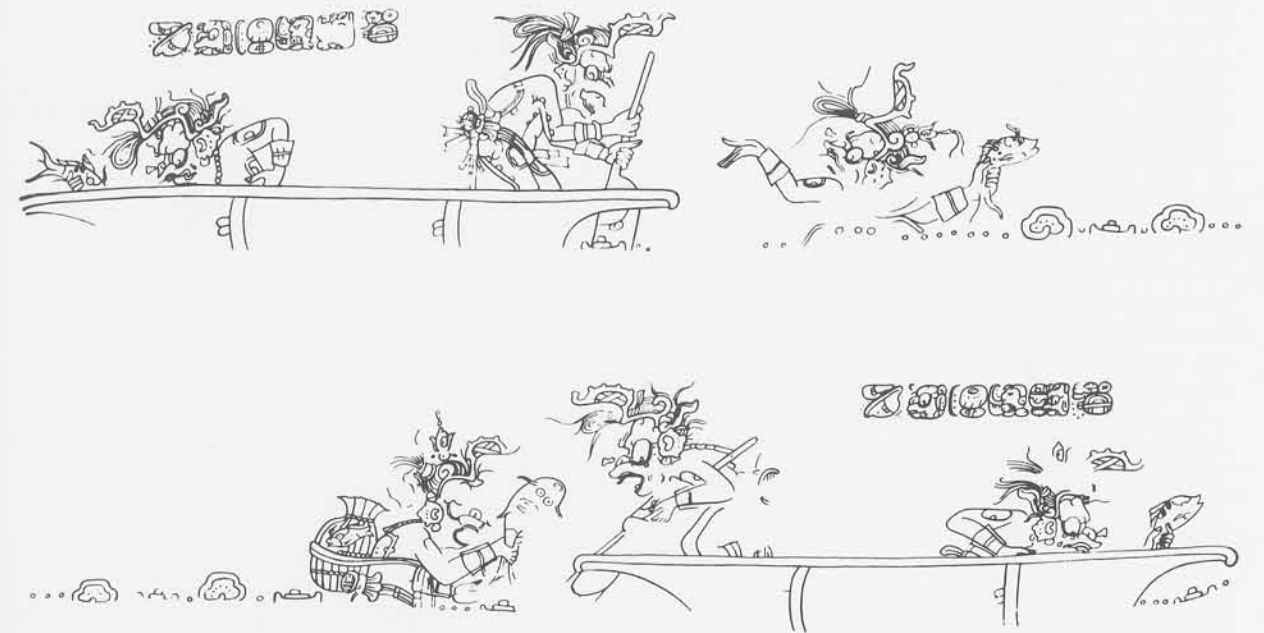
Figs. 1, 2. Mirror images on two bones showing the framed profile of a Maya priest whose gesturing hand appears outside the frame. Below is the pendent head of a cross-eyed god with Roman nose, possibly the Sun God. The two versions of the same text are labeled MT-55:A and MT-55:B, the "MT" standing for "Miscellaneous Text." No date is recorded, and all eight glyphs are "non-calendrical" as used here.



Fig. 3a,b. Divine paddlers at stern and bow of a canoe. Passengers are Iguana, Spider Monkey, a gesturing priest, Parrot Man, and a hairy animal nicknamed for the present "Shaggy Dog." A second version of this scene and text is less well-preserved, but fills out certain details where this one is damaged. The combined versions show that both paddlers have unnaturally large staring eyes as well as Roman noses. The steersman, at least, also has the crossed eye characteristic of the Sun God. The inscription shown, labeled MT-38:A, includes five glyphs on the back. The statement on the front begins with the "Calendar Round" date 6 Akbal 16 Zac.



Fig. 5. A canoe scene in which the craft has a bow in the form of a bearded serpent head, and a stern of different form from others pictured in the collection. A single deity is in charge, sitting near the stern. As in Figs. 3 and 4, the passenger list includes a single gesturing priest and animal gods, including Spider Monkey, but two other animal gods have not been identified. The text, MT-50, is divided into two "paragraphs," without dates.



Figs. 6, 7. These two Maya drawings are partial mirror images telling approximately the same story. God B, the long-nosed god, seems to simultaneously act out three different roles as a fisherman. He stands near the bow of a canoe, maneuvering it toward another depiction of himself in the water, where he offers a fish. Doubtless this comes from a creel on his back, shown only in Fig. 7. In Fig. 6 he seems not yet ready to hand over the fish. In both versions, the god also crouches in the back of the canoe, apparently stowing a fish previously collected. The text (MT-51:A and 51:B) is without date. The final glyph is the "Emblem" glyph of Tikal. The second glyph appears to be God B's head, used as his name glyph. It seems to appear again, with an attached "sky glyph," just before the "Emblem." In the later Dresden Codex, the name glyph of this god is less obvious, but his pictures are much the same, and only he grasps a fish in his hand, or paddles a canoe.

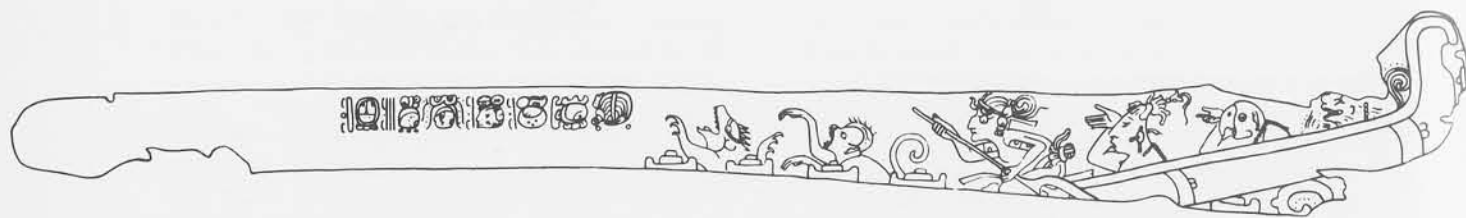


Fig. 4. A single god with large staring eye and Roman nose sits amidship, apparently guiding a canoe through rough water which hides the bow. At the stern the bottom of the canoe is above the surface of the water, indicated by hieroglyphs marking the water-line, as in other canoe scenes also. The passengers and the text (MT-38:D) are the same as in Fig. 3, except that there are no added glyphs on the back of the bone. MT-38:C is the label for the same text with a partial mirror-image duplicate of this scene not here illustrated.



Fig. 8. This awl-like bone artifact seems to have lacked a hieroglyphic text, but the design links it to that of Figs. 1 and 2. Here, within the frame, the background is cut entirely away from the profile face of the priest and from his gesturing hand, this time within the frame. Below is the upended grotesque head of God B. The design is carved in low relief, rather than being merely incised.



Fig. 9a,b. Bound prisoner and the text labeled MT-39:B (MT-39:A applies to the same text with a mirror image of the same scene). While bound captives are characteristic on the stone monuments of Tikal, they are never shown in realistic poses such as this. The eight-glyph passage of larger glyphs is on the back of the artifact, and begins with the "Calendar Round" date 11 Men 8 Muan. The first glyph on the front is one of several examples of non-calendric glyphs with numbers, in this case "three moon-sign" with a postfix.

crude, and abraded areas suggest that the piece was old, or an heirloom, when it was placed in the grave. Except for its position, there was no apparent relation to the cluster of bones on which it rested.

When attention was turned to the bones it was assumed that a batch of not too unusual tools, such as "awls," "needles," "perforators," had been rather carelessly deposited in this far corner of the tomb. Worked, carved, or incised human or animal bones are not, in themselves, unusual artifacts; they might be expected to be found in one form or another at almost any Maya site, sometimes in graves or simply as discarded refuse. However, when further cleaning revealed two long tubes with carved ends and beautifully incised columns of hieroglyphs, accented with the brilliant red of cinnabar, it became apparent that this was not a mere batch of utilitarian implements, and a tedious job of preservation and removal was indicated. Fortunately, this was the final chore to complete the excavation of the tomb; it required five full days of careful picking, brushing, drying, and solidifying *in situ* before the entire collection was recorded and removed to the laboratory. Individual bones were not scattered, and appeared to be only slightly displaced from their original positions. All were cracked or fragmented by the vertical pressure of three feet of overlying debris and, in some cases, were extremely soft due to the high water content absorbed from the constantly damp floor. Some were badly disintegrated, eroded, and discolored by oxidation of organic material, especially where bone was in contact with bone and under concentrated pressure of fallen stones. On the other hand, many were surprisingly well preserved—hard and polished when dried and cleaned. There was no evidence to suggest that any of the bones were broken or incomplete when placed in the tomb; missing parts may most likely be accounted for by complete disintegration or extreme fragmentation which made collection or matching fits impossible. The exact number of complete pieces originally in the collection could not be determined, but further study and attempts to fit minute fragments will probably not change greatly the present estimate of approximately ninety separate items.

No significant relationship of one bone to another was evident from their arrangement in the tomb but some were clearly grouped together. Most obvious in the arrangement was that all but six of the bones lay approximately parallel to each other and, with only a few exceptions, their pointed ends, or distal ends in the case of bones with recognizable joints, were to the southwest.

In grouping, pairs of long split bones were placed one inside the other and long, slender awl-like bones were covered by them. There was also a pronounced tendency for bones to occur in pairs. Where modification of the original bone did not remove all form, it is seen that a right and left bone were used, probably a matching pair. None of the items retains the natural form of the bone from which it was fashioned—all have been modified by splitting, thinning, carving, and cutting to artificial shapes. In some cases articular ends remain, but these too have been modified. The collection has not yet been studied for determination of whether the bones are all animal, or whether human bones are also represented. However, of those which retain slightly modified articular ends, one appears to be a human tibia. It is possible that long, slender, awl-like items were made from strips cut from human long bones. Others retaining recognizable joint ends are clearly animal.

The uniqueness of this collection of bones from Burial 116 lies not so much in the large number of items composing it, but rather in the quantity of inscribed hieroglyphic texts, the subject matter of incised drawings, and the high degree of artistic and technical ability they exhibit. In these respects the collection is truly unprecedented. Of eighty-nine items catalogued, thirty-seven are engraved with hieroglyphs or hieroglyphs and scenes, fourteen are worked by shaping and carving, and thirty-five are plain. The accompanying drawings by Miss Annemarie Seuffert faithfully portray the delicacy of line and intricacy of design. The engraving was done with an extremely fine instrument, probably a point rather than a blade, and in most instances the line was emphasized by rubbing brilliant cinnabar into the incision to give the effect of a red-line drawing against a bone-white background. Four pairs of the incised items are complete or partial pictorial mirror-images on right and left hand bones. All of these had been rubbed with cinnabar and the joint ends heavily coated with the same pigment. Except that the repeated scenes appear on right and left hand pairs of bones, the significance of the mirrored image is not apparent and in all of these bones the hieroglyphs are in normal form, not reversed.

The technical and artistic ability of the engraver, or engravers, is at once apparent in the sureness of flowing lines and pleasing composition of design to fit the space and form of the bone as exemplified in Figs. 1, 2, and 10. The boat scenes, Figs. 3a, 4, 5, 6, and 7, are truly delightful in their unusually realistic movement and animation. Although mythical and clothed



Fig. 10. Upper portion of an awl-like artifact expanded at the top, where the hand of a painter, holding his brush, issues from the open jaws of a serpent. The brush seems suitable for delicate work, such as painting hieroglyphs and small-scale designs on paper, on plaster walls, or on some of the pottery vessels found in the same tomb. The inscription on the shaft, without date, probably consisted of three pairs of glyphs, only one pair being on this fragment. The text is numbered MT-52.



Fig. 11. Awl-like bone artifact with the "Manikin Scepter" God, one of whose legs merges into the body of a snake. On the large monuments a priest is often shown grasping the staff-like body of the snake, here much elongated, thus holding the little god before him. The text, MT-54, consists of two pairs of non-calendrical glyphs, partly destroyed.



Fig. 12. Text on a bone tube, MT-29. Although there is no explanatory picture and only eleven glyphs, five of these are devoted to recording three dates—the "Sacred Round" date 4 Ben, a "Calendar Round" date not yet surely deciphered, and a final one 6 Ben 16 Zotz. The glyph in the third and tenth places, with an infixed "percentage" sign, is a rare type of death symbol apparently heretofore unknown except in the paper codices of Postclassic times.



Fig. 13. One of several awl-like specimens showing three pairs of hieroglyphs evenly spaced on the shaft. There is evidence that such spacing was not merely for decorative effect, but also analogous to our paragraphing. The first pair of this text (MT-35) records the "Calendar Round" date 4 Cib 14 Ceh. The text closes with the Tikal "Emblem" glyph.



Fig. 14. The text on this bone artifact, MT-26, consists entirely of calendrical glyphs—three "Calendar Round" dates, each followed by an abbreviated number. Patterns in the dates themselves, and in the time-distance measuring numbers, are unique, and prove that the dates are not those of real historical events. This text makes it certain that the owner was a calendar priest who calculated across several thousands of years.

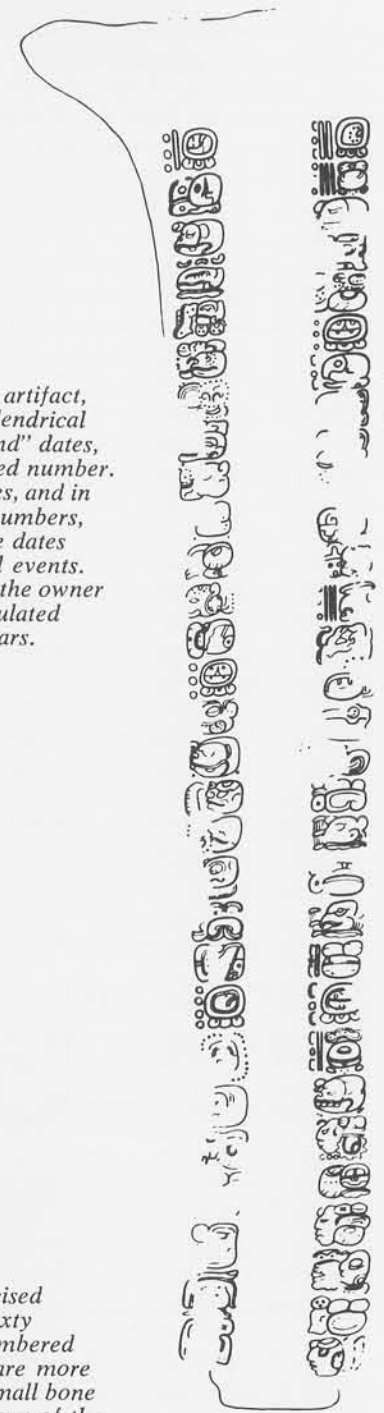



Fig. 15. An incised inscription of sixty hieroglyphs, numbered MT-28. There are more glyphs on this small bone object than on any of the stone monuments or individual wooden lintels of the Late Classic period at Tikal. Included are six "Calendar Round" dates, almost certainly given in chronological order, clustering within a period of less than seven years. In contrast to the short text of Fig. 14, the subject matter here may have dealt with real historical events. However, special glyphs thought to indicate birth dates or dates of ascension to rulership are absent.



in symbolism, the strange cargo of passengers, including a laughing iguana and a "shaggy dog," seem believable. Even the famed Bonampak murals and the beautiful Piedras Negras Stela 12 sculpture of prisoners do not match the aliveness of the god-headed men arguing (?) about the day's haul of fish. The bound individual, Fig. 9a, a recurring theme at Tikal, is portrayed in a realistic manner not seen in the stone sculptures. In this example the figure is not formalized, but is natural in posture, expression, and anatomical detail. He appears to be exactly what a person in this predicament should be.

All of the scenes require further intensive study to answer some of the many questions they raise: the origin and occurrence of the three types of canoes with their strange asymmetrical paddles; the identity of all the characters portrayed; an interpretation of the symbolism and the scenes in their entirety; the relationship of the scenes to the individual in whose tomb the bones were found; and still other questions which each of these answers will probably evoke. It is to be hoped that eventually the hieroglyphic texts will provide a key. Linton Satterthwaite has made a preliminary analysis, and supplies the accompanying note. He also collaborated in writing captions for some of the figures.

Little more can be added at this time regarding the functions of individual items in the collec-

tion, or of the collection as a whole. Similar artifact forms have been classified as "tools," such as awls, needles, perforators, pins, but it seems more likely that the Burial 116 collection represents a type of ceremonial paraphernalia or priestly implements rather than tools in the usual sense of the word. The Maya used human and animal bones for both ornamental and ceremonial purposes and they are depicted in scenes painted on pottery and in stone sculptures. Notable examples of carved bones have been found at Copan and at Chiapa de Corzo, and presumable bowls of ceremonial bones are shown in scenes carved on stone lintels at Yaxchilan and on Altar 5 at Tikal. It is suggested here that the collection from Burial 116 represents this type of priestly equipment, possibly used by the occupant of the tomb for ceremonial or divinatory purposes. As part of the collection, the plain bones pose a question. They show the same range of forms and conceivably they would have been inscribed later, had the priest not died. 

#### SUGGESTED READING

Three other tombs excavated at Tikal have been published in *Expedition*. These are: Burial 48, Early Classic, A.D. 457, in Vol. 4, No. 1; Burial 85, Late Pre-Classic, about A.D. 0, in Vol. 5, No. 2; Burial 77, Late Classic, about A.D. 750, also in Vol. 5, No. 2.

## NOTE ON HIEROGLYPHS ON BONE FROM THE TOMB BELOW TEMPLE I, TIKAL

By LINTON SATTERTHWAITE

Hieroglyphs incised on bone artifacts from the spectacular Burial 116 below Temple I, Tikal, constitute a major increment to the corpus of Maya texts. In this note, references are to Figures in Aubrey S. Trik's account of their recent discovery in this issue of *Expedition*. They are unique in being a collection made by the Maya of the Classic period, and not a series selected out by scholars for their special purposes, and its potential value exceeds that of the sum of its parts.

In respect to quantity there are no less than thirty-seven texts and fourteen explanatory pictures. After allowing for duplications there are still thirty texts and nine pictures which are substantially different. To keep track of the texts each has been assigned one of thirty "Miscellaneous Text" numbers, with added letters to cover dup-

lications. Out of a grand total of 363 glyph-blocks only sixteen are missing or completely illegible, and 233 are damaged very little, or none at all. The existence of duplicates sometimes eliminates doubt, and gives a valuable lesson respecting permissible variation in drawing glyphs and pictures. The head of the long-nosed God B as portrayed in glyphs and pictures of Figs. 6 and 7 is a good example. On the other hand another unique feature may lead to error when reading damaged dot-bar numbers. These are drawn either as solid points and lines, or as outlined dots and bars. Partial erasure can lead to doubt as to how many dots or bars were originally intended.

Since no similar collection is available for comparison, perhaps one should not be surprised at great variability within it. This surely

is something to consider in speculating on function. Fourteen of the thirty different texts contain dates, but sixteen do not. Among those with dates, there may be only one date—but there may be several, up to a maximum of six. One expects non-calendric glyphs whether or not there are also dates, but two of the multi-date texts of this collection are stripped down to chronological statements and nothing else.

One of these, MT-26 shown in Fig. 14, differs from all the others in consisting of three dates, each followed by an abbreviated time-distance measuring number. Patterns in both the dates and numbers prove that the owner of the collection was an expert in making esoteric calendrical calculations involving hundreds and (almost certainly) thousands of years.

Our dates are "Calendar Round" dates which, by the rules of the system, recur every fifty-two years. Their presence in nearly half of the collection links it to the inscriptions on major monuments. But here they are not fixed in time by an additional "Long Count" from a fixed point far in the mythological past. Perhaps we can supply the missing Long Count positions, but only by justifying several preliminary assumptions. For an exposition of the two sorts of dating see "Maya Long Count Numbers" in *Expedition*, Volume 2, No. 2.


In general these texts on minor objects are short, as one would expect, running from four to sixteen glyph-blocks. But there is a very striking exception, MT-28 (Fig. 15). Its sixty blocks make it longer than any text on a major Tikal monument of the Late Classic period. This must be the first time anything of the sort has been found in so unimpressive a setting.

Many of the shorter texts are broken down into groups of glyphs, especially into three pairs or three trios on the shafts of awl-like artifacts where space limitations cannot be the explanation. On the other hand we may also have continuous columns or rows. I believe a fair case can be made for regarding these groupings by spacing as functional, in the sense of "paragraphing," though the evenness and sizes of the spaces are probably in the realm of design for esthetic effect. This is something to keep in mind when studying the non-calendric glyphs. Several of these seem to have a special affinity for first or last place in a supposed "paragraph."

The new texts, with or without this special feature, will surely be useful in advancing our limited understanding of the non-calendricals. The subjects dealt with in the tomb collection must differ considerably from those of the major

monuments. Nevertheless, and this is an advantage, overlaps can be detected in advance of decipherment. On the monuments one almost always finds chronology, and we have it, in somewhat simpler form, in nearly half the texts of this collection. Also, several glyphs which appear here have recently been singled out for special attention as they appear in the Late Classic monuments of Tikal. Among these are glyphs nicknamed "isolated katun," "Batab," and "Tikal Emblem No. 1," which are partially understood.

Recently Tatiana Proskouriakoff showed that two glyphs called "up-ended frog" and "toothache" seem, at Piedras Negras, to belong with dates for real historical events. A popular account is given in her "Lords of the Maya Realm," *Expedition*, Vol. 4, No. 1. These two glyphs are known at Tikal, but not in this collection from the tomb. Their absence here tends to confirm the common-sense assumption that when the glyphic system was used to record dynastic events such as the birth or accession of a ruler, this would not be on minor artifacts destined for burial with him.

There are already indications that entirely new signs, and new combinations of previously known ones, are present in the collection. Some of the glyphic and pictorial elements as well seem to have their closest parallels far afield, in the much later augural tables in the paper manuscripts or "codices." This also points toward calendric divination behind these records, rather than real events. Texts and pictures alike are fascinating from many points of view. 



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